

WHAT IS CLAIMED IS:

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A1C1
1. A golf ball comprising:
a dual core assembly including a center component and a core layer disposed about said center component, said center component comprising a thermoset material and said core layer comprising a thermoplastic material;
5 and

a cover layer assembly disposed about said dual core assembly, said cover layer assembly including one of (i) an inner cover layer having a Shore D hardness of 65 or greater and an outer cover layer having a Shore D hardness of 65 or less, said inner cover layer being harder than said outer cover layer, and (ii) an inner cover layer having a Shore D hardness of 65 or less and an outer cover layer having a Shore D hardness of 65 or greater, said inner cover layer being softer than said outer cover layer.

2. The golf ball of claim 1 wherein at least one of said inner cover layer and said outer cover layer comprises a polyurethane material.

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A2
3. A golf ball comprising:
a dual core having a center component and a core layer disposed about said center component, wherein said center component comprises a thermoset material and said core layer comprises a thermoplastic material; and
5 a single cover layer disposed about said dual core, said cover layer having a Shore D hardness of from about 40 to about 80.

4. The golf ball of claim 3 wherein said single cover layer comprises a polyurethane material.

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A3
5. A golf ball comprising:
a dual core including a center component and a core layer disposed about said center component, said center component comprising a thermoset material and said core layer comprising a thermoplastic material; and

5 a cover layer assembly disposed about said dual core.

6. The golf ball of claim 5 wherein said cover layer assembly includes at least one of (i) an inner cover layer having a Shore D hardness of 65 or greater and an outer cover layer having a Shore D hardness of 65 or less, said inner cover layer being harder than said outer cover layer, (ii) an inner cover
5 layer having a Shore D hardness of 65 or less and an outer cover layer of 65 or greater, wherein said inner cover layer is softer than said outer cover layer, and (iii) a single outer cover layer having a Shore D hardness of from about 40 to 80.

7. The golf ball of claim 5 wherein said thermoset material comprises a material selected from the group consisting of (i) a diene-containing polymer, (ii) a metallocene catalyzed polyolefin that is crosslinked, (iii) a polyurethane, (iv) a silicone, (v) a polyamide, (vi) a polyurea, and (vii) combinations thereof; and
5 said thermoplastic material comprises a material selected from the group consisting of (i) an ionomer, (ii) a polyurethane, (iii) an elastomer, (iv) a polyetheramide, (v) a polyetherester, (vi) a metallocene catalyzed polyolefin, (vii) a styrene butadiene block copolymer, and (viii) combinations thereof.

8. The golf ball of claim 5 wherein said core layer comprises more than one layer.

9. The golf ball of claim 5 wherein said thermoset material comprises a polybutadiene rubber.

10. The golf ball of claim 5 wherein said thermoset material comprises a polyurethane.

11. The golf ball of claim 5 wherein said thermoplastic material comprises a material selected from the group consisting of (i) polyurethane, (ii) polyester, (iii) polyamide, (iv) ionomer, (v) polycarbonate, (vi) polyether block amide, and (vii) combinations thereof.

12. The golf ball of claim 5 wherein said center component of said dual core has an outer diameter of from about 0.500 inches to about 1.250 inches, and said dual core has an outer diameter of from about 1.25 to about 1.600 inches.

13. The golf ball of claim 5 wherein at least one of said core layer and said center component of said dual core comprise a density increasing agent.

14. The golf ball of claim 5 wherein at least one of said core layer and said center component of said dual core comprise an agent that is foamed or otherwise reduced in density.

5 SUB B27 15. A golf ball comprising:
a dual core having a center component and a core layer disposed about said center component wherein both said center component and said core layer comprise a thermoplastic material; and
a cover layer disposed about said dual core.

5 16. The golf ball of claim 15 wherein said cover layer includes at least one of (i) an inner cover layer having a Shore D hardness of 65 or greater and an outer cover layer having a Shore D hardness of 65 or less, said inner cover layer being harder than said outer cover layer, (ii) an inner cover layer having a Shore D hardness of 65 or less and an outer cover layer of 65 or greater, wherein said inner cover layer is softer than said outer cover layer, and (iii) a single outer cover layer having a Shore D hardness of from about 40 to 80.

17. The golf ball of claim 15 wherein said thermoplastic material comprises a material selected from the group consisting of (i) an ionomer, (ii) a polyurethane, (iii) an elastomer, (iv) a polyetheramide, (v) a polyetherester, (vi)

- 5 a metallocene catalyzed polyolefin, (vii) a styrene butadiene block copolymer, and (viii) combinations thereof.

~~18. The golf ball of claim 15 wherein said core layer comprises more than one layer.~~

19. The golf ball of claim 15 wherein said thermoplastic material comprises a material selected from the group consisting of (i) polyurethane, (ii) polyester, (iii) polyamide, (iv) ionomer, (v) polycarbonate, (vi) polyether block amide, and (vii) combinations thereof.

20. The golf ball of claim 15 wherein said center component of said dual core has an outer diameter of from about 0.500 inches to about 1.250 inches, and said dual core has an outer diameter of from about 1.25 to about 1.600 inches.

21. The golf ball of claim 15 wherein at least one of said core layer and said center component of said dual core comprise a density increasing agent.

22. The golf ball of claim 15 wherein at least one of said core layer and said center component of said dual core comprise an agent that is foamed or otherwise reduced in density.

23. A golf ball comprising:
- a dual core assembly including (i) a center component and (ii) a core layer disposed about said center component;
 - a dual cover assembly disposed on said dual core assembly, said dual cover assembly including an (i) inner cover layer, and (ii) an outer cover layer disposed on said inner cover layer, said outer cover layer defining a plurality of dimples, at least one of said inner cover layer and said outer cover layer comprising a first ionomer having 16 weight percent acid or less, and at
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10 least one of said inner cover layer and said outer cover layer comprising a second ionomer having greater than 16 weight percent acid.

24. The golf ball of claim 23 wherein said inner cover layer comprises said second ionomer having greater than 16 weight percent acid.

5 ~~5037~~ 25. A golf ball comprising:
a dual core assembly, said dual core including a center core component and a core layer disposed about said center core component; and
a cover layer disposed about said dual core assembly, said cover layer comprising a polyurethane material.

26. The golf ball of claim 25 wherein said cover layer is a single cover layer.

27. The golf ball of claim 25 wherein said cover layer is a multi-layer cover assembly.

28. The golf ball of claim 25 wherein said polyurethane material is a thermoset material.

29. The golf ball of claim 25 wherein said polyurethane material is a thermoplastic material.

30. The golf ball of claim 25 wherein said polyurethane is a cast polyurethane.

31. A golf ball comprising:
a dual core assembly, said dual core assembly including (i) a center core component and (ii) a core layer disposed about said center core component; and

- 5 a dual cover assembly disposed on said dual core assembly, said cover assembly including an inner cover layer having a Shore D hardness of 70 or more, and said outer cover layer having a Shore D hardness of 45 or less.

32. A golf ball comprising:

a dual core assembly, said dual core assembly having a center core component and a core layer disposed about said center core component; and

- 5 a cover layer disposed about said dual core assembly, said cover layer including an acrylic acid based high acid ionomer neutralized with a cation selected from the group consisting of sodium, potassium, lithium, zinc, magnesium, manganese, calcium, nickel, and combinations thereof.

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33. A golf ball comprising:

a multi-layer core assembly including (i) a center core component, (ii) a first core layer disposed on said core component, and (iii) a second core layer disposed on said first core layer; and

- 5 a cover layer disposed on said multi-layer core assembly.

34. A golf ball comprising:

a dual core assembly including (i) a center core component and (ii) a core layer disposed on said center core component; and

- 5 a cover layer disposed on said dual core assembly, said cover layer including a thermoplastic elastomer.

35. A golf ball comprising:

a dual core assembly, said dual core assembly comprising (i) a center core component and (ii) a core layer disposed on said center core component, said center component including a thermoset material and said core component including a thermoplastic material; and

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a multi-layer cover assembly disposed on said dual core assembly, said multi-layer cover assembly including (i) an inner cover layer and (ii) an outer cover layer.

36. The golf ball of claim 35 wherein said inner cover layer exhibits a Shore D hardness of at least 65 and said outer cover layer exhibits a Shore D hardness of less than 65.

37. The golf ball of claim 35 wherein said inner cover layer exhibits a Shore D hardness of less than 65 and said outer cover layer exhibits a Shore D hardness of at least 65.